

Serial No.: 10/602,217  
Examiner: Sung H Pak  
Art Unit: 2874

### REMARKS

In the Office Action mailed July 12, 2005, claims 33, 34, and 37-40 stand rejected under 35 USC §103(a) as being unpatentable over Yap et al. (US Patent 6,781,533) in view of Taylor (U.S. Patent 6,031,243), and claims 35-36 stand rejected under 35 USC §103(a) as being unpatentable over Yap et al. and Taylor further in view of Hellberg (US Patent 6,094,458). Applicant has amended the claims to more clearly define the present invention.

More particularly, amended claim 33 is directed to a sigma-delta-type analog-to-digital converter comprising:

an integration stage comprising a resistor, a first heterojunction thyristor device, and a feedback capacitor, **wherein said first heterojunction thyristor has an input terminal and an output terminal, said input terminal operably coupled to said resistor, said feedback capacitor operably coupled between said input terminal and said output terminal, and said first heterojunction thyristor providing high gain amplification of an electrical signal communicated between said input terminal and said output terminal (Emphasis added) ....**

Nowhere does the cited prior art teach or suggest these features. The Examiner admits that Yap et al. does not explicitly state the use of heterojunction thyristor device, but goes on to state the use of thyristor devices as high gain amplifiers as well as electro-optical components are well known. The Applicant has amended claim 33 to clarify that the first heterojunction device provides "high gain amplification of an electrical signal

S/7

Serial No.: 10/602.217  
Examiner: Sung H Pak  
Art Unit: 2874

communicated between said input terminal and said output terminal.” Such high gain “electrical” amplification is not taught or suggested by the Taylor reference. In contrast, Taylor describes “optical” lasers and “optical” detectors that are realized from a P-type/N-type modulation doped quantum well/P-type structure. Nowhere does Taylor teach or suggest a heterojunction thyristor structure (e.g., a P-type/N-type modulation doped quantum well/P-type modulation quantum well/N-type structure) as taught in the present application and recited in the claim. Moreover, the “optical” laser and detector devices of Taylor generate/receive optical signals and have nothing to do with employing a heterojunction thyristor structure for high gain “electrical” amplification of an electrical signal communicated between its input terminal and output terminal as taught in the present application and recited in the claim. Thus, Taylor fails to teach or suggest important features of claim 33. For these reasons, claim 33 as amended is patentable over the cited art.

Similar arguments apply to the rejection of claims 35-36.

The dependent claims 34-40 are patentable over the cited prior art for those reasons advanced above with respect to independent claim 33 from which they depend, and for reciting additional features neither taught nor suggested by the prior art.

In light of all of the above, it is submitted that the claims are in order for allowance, and prompt allowance is earnestly requested. Should any issues remain

Serial No.: 10/602,217  
Examiner: Sung H Pak  
Art Unit: 2874

outstanding, the Examiner is invited to call the undersigned attorney of record so that the case may proceed expeditiously to allowance.

Respectfully submitted,



Jay P. Sbrrollini  
Reg. No. 36,266  
Attorney for Applicant(s)

GORDON & JACOBSON, P.C.  
60 Long Ridge Road  
Suite 407  
Stamford, CT 06902  
voice: (203) 323-1800  
fax: (203) 323-1803  
email: [jay@gordonjacobson.com](mailto:jay@gordonjacobson.com)

October 12, 2005